Alliance

LAHI

Fig 1. Lahi Bunch

Classification

Ploidy: 3X
Genome: AAB
Subgroup: Placific Pantain
Clone set: Popo'ulu
Type: Cooking
Suspected country of origin: Hawaii
ITC code: ITC1171

Status

Lahi is a Pacific plantain, believed to originate from Hawaii, rich in pro-Vitamin A carotenoids with at least **229 µg Retinol Activity Equivalent** per 100g when raw (on a fresh weight basis). This is estimated to meet **57% of the daily recommended intake** of Vitamin A of children under 5 years.

It is being fast-tracked for potential adoption into the agri-food systems of Eastern Africa. It has been assessed on-station and on-farm in Burundi and Eastern Democratic Republic of Congo (DRC). On-station trials are also underway in Tanzania, and Uganda.

Fig 2. Whole plant

Fig 3. Pseudostem

Fig 4. Neck

Fig 5. Petiole

Description

* Lahi has a tall stature. The underlying pseudostem has a predominantly green colour with a yellow tinge (fig 2)
* The leaf petiole is straight with erect margins that are winged and clasping the pseudostem. The petiole base has small brown blotches (fig 4,5)
* The leaves have an intermediate habit and are bright green with both sides of the base rounded (fig 6)
* The male bud is ovoid in shape with bracts that have an inner pink-purple colour and an outer purple-brown colour (fig 7)
* The compound tepal, and free tepals on the flowers are yellow as are the style and filament (fig 8)
* The fingers are cucumber shaped: short, straight, rounded and blunt. The fruit apex is also rounded without any flower relicts. The peel of mature unripe fruit is green in colour (fig 9)
* The pulp colour of a mature finger (with unripe) is light yellow: RHS 3/3 1205U (fig 10)

Fig 6. Leaf

Fig 7. Male bud

Fig 8. Flower

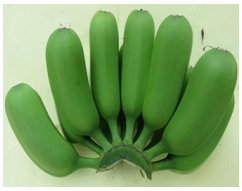

Fig 9. Hand

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Agronomic Traits (Average of 8-10 plants for 3 cycles)	Lahi
Time from flowering to harvest (days)	144.3
Plant height at flowering (cm)	301.4
Pseudostem girth at base at flowering (cm)	81.6
Number of functional leaves at flowering	10.1
Bunch weight (kg)	16.7
Number of hands	7.2
Number of fingers on bunch	83.0
Weight of hand (kg)	2.8
Fruit circumference (cm)	9.2
Fruit length (cm)	17.5

Fig 10. Finger

Agronomic Performance

* Characteristics of Lahi to the left are based on agronomic data from on-station trials in Burundi, North and South Kivu in Eastern DRC
* Values are ***averages*** of 8-10 plants evaluated from over 3 cropping cycles in each site: Burundi– 2 sites; South Kivu– 3 sites; and North Kivu-3 sites
* Lahi takes approximately ***4.8 months*** from flowering to maturity
* A bunch of Lahi can weigh up to ***30kg***

Pro-vitamin A carotenoids Content

* Lahi contains ***3,145µg/100g*** pro-Vitamin A carotenoids when ***raw and unripe*** (on fresh weight basis)
* This is estimated to yield ***229 µg to 713 µg Retinol Activity Equivalent*** which could meet 57% to >100% of the daily recommended intake of Vitamin A of children under 5 years (400 RAE µg/day) and 33% to 100% of the daily recommended intake of Vitamin A of adult women (700 RAE µg/day)

  Values are means of three individual samples on fresh weight basis of bunches obtained from North Kivu, DRC[1]. 100g of banana is approximately one finger.

* The pro-Vitamin A carotenoid content increases as the banana ripens
* As a plantain (cooking type banana), Lahi can be boiled, fried, roasted or steamed with or without the peel. It can be cooked when unripe or ripe
* Lahi was preferred when roasted in Burundi and Eastern DRC with a mean score of 4, a rating of good using a 5 point hedonic scale

References

1. Ekesa, B., Nabuuma, D., Kennedy, G., and Van den Bergh, I. 2017. Sensory evaluation of Provitamin A carotenoid-rich banana cultivars on trial for potential adoption in Burundi and Eastern Democratic Republic of Congo. Fruits, vol72, No 5, pages 261-272
2. Ekesa, B., Nabuuma, D., Blomme, G. 2015. Provitamin A carotenoid content of unripe and ripe banana cultivars for potential adoption in eastern Africa. Journal of Food Composition and Analysis, Issue 43, pages 1-6.
3. HarvestPlus carotenoid colour strips. 2007. Standardised using Royal Horticultural Society range of accepted colours and Universal Pantone colours.
4. IPGRI-INIBAP/ CIRAD. 1996. Descriptors for banana (*Musa* spp.). International Plant Genetic Resources Institute, Rome Italy; International Network for the Improvement of Banana and Plantain, Montpellier, France; Centre de coopération internationale en recherché agronomique pour le développement, Montpellier, France.

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